

Serial No. 10/797,486

Amend. In Resp. to Off. Act. of Aug. 1, 2006

UTILITY PATENT

B&D No. JK01261

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (original): A power tool, comprising:

a working element for performing a task on a workpiece;

a light source arranged to project a beam of light adjacent the interface between the working element and the workpiece; and

a detector configured to detect the presence of a human body part in the beam of light,

wherein the detector is communicatively coupled to the power tool so as to stop operation of the working element, if a human body part is detected.

Claim 2 (original): The power tool of claim 1, wherein the working element is at least one of a circular saw blade, a band saw blade, a drill bit, a cutter head, or a router bit.

Claim 3 (original): The power tool of claim 1, wherein the light source is an infrared source, a near-infrared source, a combination near-infrared/infrared source, a visible light source, a combination near-infrared/visible source, an ultraviolet source, a combination ultraviolet/visible source, a coherent light source, or a far-infrared source.

Claim 4 (original): The power tool of claim 1, further comprising a countermeasure device communicatively coupled to the detector, said countermeasure device being constructed for stopping the working element if a human body part is detected.

Claim 5 (original): The power tool of claim 4, wherein the countermeasure device is a mechanical break, a sacrificial brake, an electric brake, or a removal device.

Claim 6 (original): The power tool of claim 1, wherein the light source projects a zone generally

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about the working element.

Claim 7 (canceled).

Claim 8 (original): A saw, comprising:

an arbor constructed for mounting a circular saw blade thereto;

a light source arranged so as to project a beam of light adjacent the circular saw blade; and

a detector configured to detect the presence of a human body part in the beam of light,

wherein the detector is communicatively coupled so as to stop the rotation of the circular saw blade, if a human body part is detected.

Claim 9 (original): The saw of claim 8, wherein the light source is an infrared source, a near-infrared source, a combination near-infrared/infrared source, a visible light source, a combination near-infrared/visible source, an ultraviolet source, a combination ultraviolet/visible source, a coherent light source, or a far-infrared source.

Claim 10 (original): The saw of claim 8, further comprising a countermeasure device communicatively coupled to the detector, said countermeasure device being constructed to prevent contact between the human body part and the circular saw blade if the saw is operating.

Claim 11 (original): The saw of claim 10, wherein the countermeasure device is a mechanical break, a sacrificial brake, an electric motor brake, or a removal device.

Claim 12 (original): The saw of claim 8, wherein the light source projects a beam of light defining a zone generally about the circular saw blade.

Claim 13 (original): The saw of claim 8, wherein the projected light beam defines a point adjacent the circular saw blade.

Claim 14 (canceled).

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Claim 15 (original; withdrawn): The saw of claim 8, wherein the light source is a near-infrared light source.

Claim 16 (original; withdrawn): The saw of claim 8, wherein the detector is a diffuse reflectance electro-optical detector.

Claim 17 (original): The saw of claim 8, wherein the detector is configured to detect the presence of a human body part in at least two discrete locations with respect to the circular saw blade.

Claim 18 (original): The saw of claim 8, wherein the detector is configured to initiate passive stopping of the circular saw blade at a remote position and active stopping of the circular saw blade at a proximal position, based on detection of a human body part, with respect to the circular saw blade.

Claim 19 (original): The saw of claim 8, wherein the light source and the detector are automatically re-enabled when the saw is activated.

Claim 20 (original; withdrawn): The saw of claim 8, wherein the detector is an Indium-Gallium-Arsenic based detector.

Claim 21 (currently amended): The saw of claim 8, wherein the light source and the detector are configured as a fiber optic probe.

Claim 22 (currently amended): A table saw, comprising:
a support surface for at least partially supporting a workpiece;
an arbor constructed for mounting a circular saw blade thereto, said arbor being configured so as to extend the circular saw blade through the support surface;
a light source arranged to project a beam of light adjacent the circular saw blade; and

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an electro-optical detector configured to detect the presence of a human body part in the beam of light,

wherein the detector is communicatively coupled to the saw so as to stop the rotation of the circular saw blade, if a human body part is detected.

Claim 23 (currently amended): The table saw of claim 2322, wherein the light source is an infrared source, a near-infrared source, a combination near-infrared/infrared source, a visible light source, a combination near-infrared/visible source, an ultraviolet source, a combination ultraviolet/visible source, a coherent light source, or a far-infrared source.

Claim 24 (currently amended): The table saw of claim 2322, further comprising a countermeasure device communicatively coupled to the detector, said countermeasure device being constructed to prevent contact between the human body part and the circular saw blade if the saw is operating.

Claim 25 (currently amended): The table saw of claim 2524, wherein the countermeasure device is a mechanical break, a sacrificial brake, an electric motor brake, or a removal device.

Claim 26 (currently amended): The table saw of claim 2322, wherein the light source projects a beam of light defining a zone generally about the circular saw blade.

Claim 27 (currently amended): The table saw of claim 2322, wherein the projected light beam defines a point adjacent the circular saw blade.

Claim 28 (currently amended): The table saw of claim 2322, further comprising an indicator configured to provide a visual indication of a detection zone.

Claim 29 (canceled).

Claim 30 (currently amended; withdrawn): The table saw of claim 2322, wherein the electro-

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optical detector is a diffuse reflectance electro-optical detector.

Claim 31 (currently amended; withdrawn): The table saw of claim ~~2322~~, wherein the detector is configured to detect the presence of a human body part in at least two discrete locations with respect to the circular saw blade.

Claim 32 (currently amended): The table saw of claim ~~2322~~, wherein the electro-optical detector is configured to initiate passive stopping of the circular saw blade at a remote position and active stopping of the circular saw blade at a proximal position, based on detection of a human body part, with respect to the circular saw blade.

Claim 33 (currently amended): The table saw of claim ~~2322~~, wherein the light source and the electro-optical detector are automatically re-enabled when the saw is activated.

Claim 34 (currently amended): The table saw of claim ~~2322~~, wherein the electro-optical detector is an Indium-Gallium-Arsenic based detector.

Claim 35 (currently amended; withdrawn): The table saw of claim ~~2322~~, wherein the light source and the electro-optical detector are configured as a fiber optic probe.

Claim 36 (currently amended): An optical proximity device for a saw, comprising:
a light source arranged to project a beam of light adjacent to a circular saw blade; and
an electro-optical detector configured to detect the presence of a human body part in the beam of light,

wherein the detector is communicatively coupled to the saw so as to stop the rotation of the circular saw blade, if a human body part is detected.

Claim 37 (currently amended; withdrawn): The optical proximity device of claim ~~3736~~, wherein the light source is an infrared source, a near-infrared source, a combination near-infrared/infrared

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source, a visible light source, a combination near-infrared/visible source, an ultraviolet source, a combination ultraviolet/visible source, a coherent light source, or a far-infrared source.

Claim 38 (currently amended; withdrawn): The optical proximity device of claim 3736, further comprising a countermeasure device communicatively coupled to the detector, said countermeasure device being constructed to prevent contact between the human body part and the circular saw blade during operation.

Claim 39 (currently amended; withdrawn): The optical proximity device of claim 3938, wherein the countermeasure device is a mechanical break, a sacrificial brake, an electric motor brake, or a removal device.

Claim 40 (currently amended; withdrawn): The optical proximity device of claim 3736, wherein the light source projects a beam of light defining a zone generally about the circular saw blade.

Claim 41 (currently amended; withdrawn): The optical proximity device of claim 3736, further comprising an indicator configured to provide a visual indication of a detection zone.

Claim 42 (currently amended; withdrawn): The optical proximity device of claim 3736, wherein the electro-optical detector is a diffuse reflectance detector.

Claim 43 (currently amended; withdrawn): The optical proximity device of claim 3736, wherein the electro-optical detector is configured to initiate passive stopping of the circular saw blade at a remote position and active stopping of the circular saw blade at a proximal position, based on detection of a human body part, with respect to the circular saw blade.

Claim 44 (currently amended; withdrawn): The optical proximity device of claim 3736, wherein the light source and the electro-optical detector are automatically re-enabled when the saw is activated.

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Claim 45 (currently amended; withdrawn): The optical proximity device of claim 3736, wherein the electro-optical detector is an Indium-Gallium-Arsenic based detector.

Claim 46 (currently amended; withdrawn): The optical proximity device of claim 3736, wherein the light source and the electro-optical detector are configured as a fiber optic probe.

Claim 47 (currently amended; withdrawn): An optical proximity device for a saw, comprising: means for detecting the presence of a human body part in the beam of light projected adjacent a saw blade; and means for stopping operation of the saw blade, if a human body part is detected in the light beam.

Claim 48 (currently amended; withdrawn): The optical proximity device of claim 4647, wherein the stopping means includes a countermeasure device constructed to prevent contact between the human body part and the saw blade during operation.

Claim 49 (currently amended; withdrawn): The optical proximity device of claim 4748, wherein the countermeasure device is a mechanical break, a sacrificial brake, an electric motor brake, or a removal device.

Claim 50 (currently amended; withdrawn): The optical proximity device of claim 4647, further comprising an indicator configured to provide a visual indication of a detection zone.

Claim 51 (currently amended; withdrawn): The optical proximity device of claim 4647, wherein the detecting means is a diffuse reflectance detector.